



PATENT ABSTRACTS OF JAPAN

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(54) **METHANOL FUEL CELL**

(57) Abstract:

PURPOSE: To make the supply of water from the outside of a cell unnecessary by installing a heat exchanger into which exhaust gas of oxygen containing gas supplied to a cathode is introduced and in which water vapor in the exhaust gas is cooled and condensed, and a circulator by which condensed water is circulated to an anolyte.

CONSTITUTION: When liquid level is lower than a specified value, a control signal from a liquid level sensor 8 is sent to a passage valve 10 and a passage valve 9. The passage valve 9 is opened by a signal S_1 from the sensor 8, and the air is supplied to a cell stack 1 by the operation of a blower 4 through a heat exchanger 6. The air passed through the cell stack 1 is exhausted as exhaust gas. The exhaust gas containing a large volume of water vapor passes through the heat exchanger 6 through the passage valve 9 since the passage valve 10 is closed, then the gas is exhausted to the outside of the cell. In the heat exchanger, heat exchange is performed between the exhaust gas and the air, and a large volume of water vapor in the exhaust gas is condensed as condensed water 30, and the condensed water is supplied to an anolyte tank 2 through

a pipeline 7. When the liquid level in the tank 2 reaches a specified value, the recovery of the condensed water is stopped.

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